

IN THE CLAIMS:

**Claims 1-19 (Canceled)**

20. (Original) An interconnect structure comprising:

vias and trenches defined by an interlayer dielectric disposed above an underlying layer;

a carbon rich polymer layer is disposed on the surface of the interlayer dielectric, so as to line the vias and the trenches;

a barrier layer disposed over the carbide layer; and

a copper alloy over the barrier layer, filling the vias and the trenches.

21. (Original) The interconnect structure of claim 20, wherein the barrier material is comprised of tantalum.

22. (Original) The interconnect structure of claim 20, wherein the barrier material is comprised of tantalum nitride.

23. (Original) The interconnect structure of claim 20, wherein the carbon rich polymer layer is an interfacial carbide layer.

24. (Original) The interconnect structure of claim 20, wherein the interlayer dielectric is a polymer layer.

25. (Original) The interconnect structure of claim 20, wherein the interlayer dielectric is a non-organic layer.

26. (Original) The interconnect structure of claim 20, wherein the structure is repeated for multi-layered structures.